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Graduation Ceremonies September, 1944

Some Factors in Postwar Development of Medical Education and Research[1]

LEWIS HILL WEED[2]

We are now in the final months of the third year of war. Military affairs are progressing splendidly in every theatre of operations; in fact, in the European areas, advance of the allied armies has become so rapid that the collapse of Germany seems merely a matter of days or weeks. But even with the entire nation involved in war many normal activities must proceed, and we are, therefore, met today to witness the conferring of degrees upon those students who have successfully completed courses of instruction in medicine, dentistry and other academic disciplines. Certain schools here in Washington University, such as those engaged in training for engineering and for the health services, are essentially parts of the Army and Navy and I, therefore, feel a bit surprised, yet gratified, that a civilian, rather than an officer, should be invited to speak at commencement exercises during the war period. I am wholly sensible of the high honor you do me, for Washington University has played its great role during this emergency and has carried large responsibilities effectively and well. So coming before you as a civilian from the field of medicine, I ask indulgence if my remarks are largely confined to the health services.

One may be very critical of the way in which the national educational programs in medicine, dentistry and nursing have been planned and carried forward during these past three years. One may debate the effect of accelerated schedules upon the quality of training, but decision regarding these

[1] Address at the Commencement Exercises, Tuesday, September 12, 1944.

[2] Professor of Anatomy and Director, Johns Hopkins University School of Medicine, and Chairman, Division of Medical Sciences, National Research Council.

matters was not entirely the decision of the professional faculties. Regardless of the strain from continuous teaching and from excessive clinical burdens, the level of instruction in the professional schools has remained surprisingly high; and students, in spite of lack of time for assimilation of knowledge, are being graduated in medicine and in dentistry with amazingly good records of scholarship. In nursing, under the national program of training as cadet nurses, the product likewise has been of high excellence, even though the courses of instruction and the practical work have been condensed to a minimum.

During these three years of war, medical research which is intimately related to medical education, has been diverted largely into channels directly connected with military problems. Some departments within medical and dental schools have been able to maintain long-term investigations, but as a whole the shift towards war projects has been profound. Much of this research has been done in cooperative studies with frank and free interchange of information by the investigators; it is a voluntary cooperation, made particularly effective by ample federal funds. The quality of this war-inspired medical research has been high and many achievements of great scientific importance have already been recorded. The complete story cannot be told at this time as some of the investigative findings will not be reported in final form until after the war when declassification of materials and subjects will permit free publication.

Academic institutions in the health services have therefore been characterized during the war years by accelerated educational programs conducted with depleted staffs, and by diversion of the investigative resources to strictly military problems. Appreciation of these two major academic changes is necessary for understanding of our immediate postwar problems in education and research. Although it behooves us to plan for future undertakings, I hesitate to venture into this field of discussion for on almost every side and in almost every subject we have postwar planning and postwar proposals. The intangible, the unknown, factors are so great that speculation is, of course, hazardous but perhaps emphasis on certain factors, obvious today, may be of value in the development of educational and investigative programs.

Continuation of instruction with needed improvement is the first responsibility of the professional faculties; in the medical, dental and nursing schools major readjustments will result from the expected deceleration of instruction. An initial step is being taken by many medical schools in admitting classes once every twelve months instead of once every nine months; the accelerated course will be continued for a period because of the insistence on this type of instruction by the armed services. One need not be clairvoyant to anticipate difficulties in resumption of the old

schedules but these difficulties will be met by clever deans and by wise committees. Curricula will unquestionably be modified to meet the medical requirements of the returned soldier and sailor. Among other matters, there will be greater emphasis on tropical diseases; there will be further developments in preventive medicine (particularly its industrial aspects), and in the social-economic phases of disease. Then, too, there will be the task of restoring adequate premedical training for the entering students; this in itself may require major adjustments in schedules.

Such curricular problems are of relatively minor significance in the total academic picture but soon after the cessation of hostilities problems of first importance will confront medical faculties. It is recognized that returning medical officers, some of them out of contact for many months with advance in medicine and dentistry and some having devoted their period of service to activities quite apart from chosen professional pathways, will seek additional work in the schools and university hospitals. Lacking information regarding the return of the officers who were a part of the faculty, medical schools now find it difficult to give assurances that opportunities for graduate study, for assistantships and for fellowship-training will be available when needed. Every academic institution will, however, strive to create the required facilities, and the great hospitals will be able to provide a number of residencies restoring the posts now eliminated by the mandatory decreases in hospital staffs.

A further perplexity in planning lies in the fact that no one can predict today the type of practice which will be open to the returning medical officer or to the graduate of today. Obviously many changes in the economic and social aspects of the health services will occur within the next few years; indications of these changes are already before us. The extension of hospital-insurance plans and the possible introduction of medical care by industry or through social legislation will alter the relationship of hospitalization to community-service and may lead to almost complete abolition of the so-called free wards of hospitals. Under these circumstances rigid control of teaching beds may be greatly impaired for university faculties and modification of the whole program of clinical instruction may be imperative.

With such problems on the purely instructional side, medical and dental schools will also have to face postwar changes in attitudes toward medical research. The war has taught the value of national cooperative effort in this field; cooperative endeavor will conflict in part with the essential desirability of maintaining individual liberty in research. Freedom of research should be encouraged as it was in the prewar era, but in order to hold the gains from cooperative undertakings, national leadership will be needed in both civil and military medicine.

While much of medicine employed by the armed forces is the same as civil medicine, there are, however, problems of a specific military nature. Solutions of these specific problems have been sought, during the intervals of peace, by the medical officers in the armed services but in the prewar period federal research funds were not available in any large amount for the two medical departments. If our armed forces are to be kept at top efficiency and if they are to equal those of foreign countries, it is essential that continuing research on the peculiar problems of military medicine be fostered and supported. The Navy has now its thoroughly equipped Institute for Medical Research, closely associated with a great naval hospital and medical school, but the Army lacks such a medical research center. Certain phases of medical research are represented in the Aero-Medical Laboratory and other installations of the Army Air Forces and quite different phases in the Armored Medical Research Laboratory. Other facilities will unquestionably be required by the Army and Navy unless integration with civilian instructions can be achieved.

Through the employment of various mechanisms during the past three years there has been developed close cooperation between the services and civilians on the problems of military medicine. Some way for the continuation of this cooperation, as effected largely by the Committee on Medical Research, should be devised if we are to provide our armed forces with the best of medical service. The medical schools of this country have a definite responsibility in this matter and the maintenance of cooperative efforts in research essential to the armed services should become a problem of almost immediate concern to every medical faculty. Possibly the great philanthropic foundations will be willing to finance the inauguration of such cooperative endeavors and to salvage a part of this war research in medicine, but it is unlikely that foundations could serve as permanent agencies subsidizing the needed total effort.

How then are essential undertakings in medical and dental research of civil and military character to be financed in the postwar period? The income from endowments will likely continue to be very low throughout the reconstruction period and private funds available for the medical and dental schools will be all-too-small. Realization of these factors has recently prompted much discussion regarding possible federal financing in educational institutions of continuing research related to the national welfare and national defense. The essential research agency of the Government during this war, the Office of Scientific Research and Development, was created by Executive Order of the President and not by Act of Congress. It is questionable whether any federal agency brought into being by this means will survive. In the opinion of many competent observers, the continuation of such a wartime organization, with many of its personnel

borrowed from universities and from industry, is not in the best interest of government or of science. Much more likely is it, if one analyzes the present temper of our national legislators, that Congress will create such agencies of research as it desires. In the past many of the permanent governmental departments have received research funds by congressional appropriation but a general program of university subsidy for investigative purposes has not been adopted.

The British faced this fundamental problem of university finance at the end of the first world war and since then parliamentary grants of magnitude have been available to the University Grants Committee and to the Medical Research Council. As a non-political agency responsible to the Privy Council, the Medical Research Council has exercised a splendid national influence and has established itself as a central advisory body. But our British cousins are often much more forehanded and forward-looking than are we here in America and just as they met the financial problems in research a quarter century ago, so now they have anticipated and have studied postwar problems of medical education and research. Committees were appointed two and a half years ago to survey the national situation in the fields of medicine and dentistry, and were instructed to make recommendations to the Minister of Health and to the Department of Health for Scotland. The Interdepartmental Committee on Medical Schools, under the chairmanship of Sir William Goodenough, has completed its investigations, and the scholarly report of the group has but recently been issued. It comprises a thoughtful program of national planning in medical education and research for Great Britain. The national needs for physicians and surgeons, the size of effective teaching institutions, the premedical and preclinical and clinical curricula, scholarships for students, the relation of the schools to the "parent" hospital, the encouragement of research in the schools, the necessity for full-time heads of the important clinical branches, the range of salaries for the full-time staffs—all these and many other significant matters are well considered. There are estimates given of the amounts of the parliamentary appropriations required for medical education and research. The document promises to be one of first importance in the development of medicine in Great Britain as it proposes certain revolutionary changes for the national good. Here is a completed program, ready for consideration by the governing bodies.

Lacking such a study and program of action in the United States, we find ourselves today speculating as to what steps, if any, the federal government will take in the financing of research. There is much evidence that Congress recognizes the need for continuing research in the instrumentalities of warfare and it is likely that provision will be made for investigations in ordnance, in armor, in communications, etc., which will

keep our armed services abreast of those of other nations. But here the biological, medical aspects of modern warfare may well be neglected. This disregard of the human element was illustrated in the joint appointment by the Secretary of War and the Secretary of the Navy (June 12, 1944) of a committee to study problems of postwar research, and to suggest for congressional action appropriate mechanism for its furtherance. This group, headed by an executive of a large manufacturing enterprise, was composed of four representatives of the Army, four of the Navy, and four civilians. The representatives of the Army and Navy did not include any medical officers and the four civilians came from the fields of engineering and physics. There was on this committee, therefore, no direct source of information in the health services, even though it has been generally granted that the modern army and navy cannot exist without first-class medicine, dentistry and nursing.

Again, in line with the apparent tendency of Congress to create permanent agencies in place of the emergency organizations, is the much discussed Kilgore Bill, which was introduced into the last Congress. This Bill provided for the establishment of an Office of Science and Technology with a Director to be selected by the President. Within this Office a national committee on research and development would be appointed with the Director of the Office as chairman, and with fifteen members chosen at large. Of the fifteen "three shall be familiar with the scientific and technical interests, activities and problems of the Federal Government, three with those of educational institutions, three with those of agriculture, and six with those of industry (three of these six to represent management and three to represent labor)." The Bill would provide for annual appropriations of $250,000,000 and would allow the allocation of funds for basic research to government departments and would authorize grants or contracts with non-profit institutions. Provision is made for study of problems "which should be solved in the interest of national welfare and national defense," and for the "advancement of the public safety, health and welfare." One may question, however, if such an agency, in a democracy like ours, would be wholly free from political influence and would be wise in its programs. But the Bill proposes federal appropriations for research and development; it provides the administrative machinery for federal support of medical research and in consequence might prove to be the means for cooperative effort so essential to meet the national needs in medical education and research.

Still another type of federal organization, under current discussion as an agency dealing with the total national problem of research, is one modelled upon that of the National Advisory Committee for Aeronautics. This committee was created by Act of Congress in 1914; the Act with

subsequent amendments, provides for the appointment of fifteen members by the President, nine representing various government departments and six who "are acquainted with the needs of aeronautical science, either civilian or military, or skilled in aeronautical engineering or its allied sciences." The Committee, during its thirty years of existence, has been most successful in promoting design of aircraft and in furthering advance in the aeronautical sciences. Such a Committee, established by an Act of Congress and dealing with the national problem of research, would be in a favored position to receive annual federal appropriations: it could be made an effective agency for the prosecution of cooperative investigations. But in such an over-all agency, would medicine and the health services receive proper consideration, were medicine competing for appropriations against the instrumentalities of warfare?

Still another type of procedure would be to provide adequate federal financing of an agency established many years ago to furnish scientific advice to the Government. This agency, the National Academy of Sciences, was created by Executive Order of President Lincoln during the Civil War and subsequently received a congressional charter. As the United States approached the first World War, the Academy established the National Research Council as a subsidiary operating agency. The Academy-Council, as an organization, has received no direct government appropriations but has conducted its investigations for federal agencies through contract with many government departments. It is wholly conceivable that a direct congressional appropriation to the Academy-Council or an annual allocation from existing federal departments might result in the establishment of an over-all directing agency for research on problems of the national defense and welfare.

These proposals about postwar research agencies and speculations regarding their effectiveness seem to merit deep consideration by all who are concerned with education and research in the health services. In my opinion, it is quite likely that a national agency with an over-all function in research and development will be established. Federal funds for investigation, if allocated by grant or contract to non-profit institutions, may affect the whole character of the institution, for research and teaching are so intimately blended. Ideally administered, the federal allocations to educational institutions should not restrict individual initiative but would finance investigations having direct relation to national problems. Such funds would increase the institution's resources and would provide means for training of young graduates as assistants to the responsible investigators. Under such conditions of wise administration, our American institutions would greatly profit as have the British, from subsidiary federal support, granted in relation to the over-all national need.

Yet in these suggested federal organizations, medicine faces the great question of adequate representation. We in medicine have taken pride in our aloofness from political and legislative procedure; in consequence we find ourselves confronted with immediate problems, lacking time today for considered study of the whole national picture of medical education and research. Our position presently is quite typical of our national processes in medicine; our British colleagues however have been wiser and more helpful in planning national legislation. It is of course true that we in medicine and dentistry have our national and local postwar planning groups but these groups are without real authority. We have unquestionably gained something in our cooperative efforts in war research in medicine, but with out adequate study of the over-all problem we face the possibility of losing the good features of the national civilian and military effort. We in medicine must see to it that the health services are given due recognition in any national program of research for the security of the country, as such a program should, if it be wisely administered, affect civilian medical institutions. In my opinion, there is utmost need for a National Advisory Committee for Medicine, established by federal authority and charged with full responsibility for effectuating a national program in education and research in the health services. Given such a committee, wisely chosen and amply financed, advance in research and development would proceed under conditions of maximum profit to the nation; educational institutions would benefit as would the federal agencies. There should be no federal autocracy, rather a benevolent leadership in the advisory group. Yet with the end of the war in sight, though dimly, each of our great medical institutions, like Washington University, will now necessarily meet its own problems in its own way. Medical faculties have shown the needed wisdom and leadership in the past and there seems no reason to believe that these faculties will not be successful in meeting the local problems in the impending postwar period. But solution of local problems in hospitalization, in medical education and research, will not suffice for we are entering into an era of profound economic and social change where we shall require all of our national resources to meet national needs. Local planning can deal only with a small sector of the problem: there is need today for overall thinking in terms of our total resources, both physical and human.

So we come through many perplexities to the postwar era in medicine, dentistry and nursing, with full appreciation of the national difficulties ahead. Those of you who constitute members of the graduating classes have, however, had the opportunity for a splendid training in an outstanding university center. Many of you will sooner or later become members of the armed forces where you will have a welcomed responsibility for service to your country. It is a service which will widen your

professional horizon and which in many ways will pay great dividends. There is no reason to resent this call to military service; rather should you rejoice that with your training you are equipped to do first-class work in professions which have proud histories and high ideals. There is an opportunity ahead.

Lewis Hill Weed

Mr. Chancellor: It is my privilege to present to you for the honorary degree of Doctor of Science, Lewis Hill Weed, medical scientist and medical educator. He is the Professor of Anatomy and Director of the School of Medicine of Johns Hopkins University, a Trustee of the Institute for Advanced Study at Princeton and of the Carnegie Institution at Washington. He is Chairman of the Medical Advisory Board of the American Red Cross.

He received the degree of A.B. from Yale in 1908 and that of M.D. from Johns Hopkins in 1912. He holds honorary degrees from Rochester, Pennsylvania, Duke and Tufts. He has made important contributions to the anatomy and physiology of the central nervous system.

Since 1939 he has been Chairman of the Division of Medical Sciences of the National Research Council. This office, together with his position as vice-chairman of the Committee on Medical Research of the Office of Scientific Resarch and Development, has placed upon him a heavy responsibility in approving and correlating an enormous number of medical research projects pertaining to the care of the sick and wounded of this war. As he has indicated in his remarks this morning much of this work must remain secret or confidential until the end of the war. Someof us, however, who have been privileged to work with him realize fully how well he has carried the heavy burden. It is the unanimous opinion of all his colleagues in the battle of Washington that he deserves the gratitude of everybody in this country for spendid achievement. Since he is a civilian he is not entitled to wear on his coat a little piece of bright colored ribbon denoting his activities in the battle of Washington, but we,

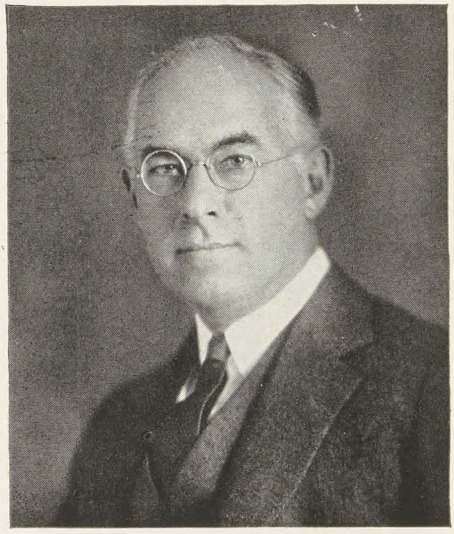
Mr. Chancellor, can show our appreciation of what he has done by giving him the bright colored hood of a Doctor of Science to wear on his back.

Evarts A. Graham.

Malvern B. Clopton

Mr. Chancellor: In citing the outstanding achievements of Dr. Malvern B. Clopton as worthy to receive from The Washington University, the honorary degree of "Doctor of Laws," it is difficult in this brief statement, to select from a record so rich in worthy accomplishments.

Born October 8, 1875, with a background of culture and refinement, he received his preparatory education in the St. Louis public schools through the high school, then attended the University of Virginia, completing its classical course in 1895, supplemented by the degree of Doctor of Medicine in 1897, whereupon for two years he practiced surgery as an interne in Johns Hopkins Hospital where he was one of the first group of surgical internes to come under the inspiring influence of the master surgeon, Dr. William Halsted, —an experience which had a lasting influence upon Dr. Clopton's professional work.



He then became and long continued to be Professor of Clinical Surgery in the School of Medicine of Washington University, serving also as Assistant Surgeon on the staff of Barnes Hospital, and as Associate Surgeon during twelve years on the staff of St. Louis Children's Hospital where he made many important contributions in the field of children's surgery, and largely became responsible for the high grade of surgery in that institution. He was Chief of Staff of St. Luke's Hospital in St. Louis, from 1933 to 1937, and Consulting Surgeon at the Jewish Hospital.

In the first World War, Dr. Clopton rendered notable service from 1917 to 1921, as Lieutenant Colonel, Medical Corps of the Army, having been connected with Base Hospital No. 21 from St. Louis, and later was the Commanding Officer of Mobile Hospital No. 4, A. E. F., in which latter position he was at the front during the heaviest fighting that occurred.

After the war, he returned to St. Louis and resumed his important work in the above hospitals. His reputation among competent surgeons was that of always using excellent judgment and of being a highly careful, skillful and successful operator.

His high standing received professional recognition by his election to membership in the American College of Surgeons, the Southern Surgical Association and the Western Surgical Association,—organizations that are small and composed of only the most outstanding surgeons. He is also a member of the St. Louis Surgical Society and the Society of Clinical Surgery.

Since November 21, 1927 and up to November 2, 1943, he was a member of the Corporation (Board of Directors) of The Washington University, and from February 17, 1932 to November 16, 1942, more than ten years, he served with outstanding ability as its President.

His was the quiet but strong guiding influence that solved many and important problems of public, educational and financial policy, that faced the Corporation, especially during periods of economic depression. The personnel in all departments of the University had complete confidence in his ability as an effective executive, in his integrity, and in his patience in deciding questions upon their merits only. These qualities of leadership won for him the admiration, respect and affectionate regard of all who served the University.

Throughout his career, Dr. Clopton has been deeply interested in medical education and particularly in the development of a great medical center in St. Louis, with the School of Medicine of Washington University as its teaching unit. As President of the University, he gave generously in both time and individual funds toward promoting its work and enlarging the field in which the Medical Center has become famous. He had the vision to foresee that the standards of professional work in the hospitals grouped around the School of Medicine, must be under the direction of the staff of the School, and by his enthusiasm and qualities of leadership, he succeeded in persuading others who saw the vision less clearly, that a first-rank medical and teaching center in St. Louis would greatly elevate and maintain the highest standards of education and practice throughout this community, in the still larger area over which its influence gradually became extended, and throughout this country. He has enjoyed the great privilege and satisfaction of living to see the School of Medicine and the Medical Center,—largely through his efforts and those of his associates on the staff of the School of Medicine—acquire recognition and rank as one of the best of such organizations benefiting humanity, in the entire world.

Mr. Chancellor, it is respectfully suggested that The Washington Uni-

versity will honor itself in honoring so great a contributor to its welfare, past and future. Since it was deemed inexpedient to ask him to be present in person, I present to you, for the degree of Doctor of Laws in absentia, Dr. Malvern B. Clopton.

Daniel N. Kirby

Announcements

Mr. Alfred Lee Shapleigh of the Board of Directors in giving the announcements at the Commencement Exercises on September 12th mentioned that "on June 9th George R. Throop after approximately twenty-eight years of faithful service retired from office. During the many years of service Dr. Throop was untiring in his efforts and demonstrated unusual skill and energy in the University's behalf, and the Corporation desires to express its appreciation of his earnest work. . . . On the retirement of the Chancellor, Mr. Harry B. Wallace, president of the Corporation, at the suggestion and request of the deans, agreed at much sacrifice to himself and his personal interests to carry on as Acting Chancellor until a new Chancellor has been selected and installed."

Prizes and Honors

DOCTOR OF MEDICINE CUM LAUDE

Samuel Paul Bessman
David Sanford Citron, A.B.
George Nino Donnell, A.B.
Albert Earl Hensel, Jr., A.B.
Robert Dale Lange, A.B.
David Douglas LeGrand, B.S.
Paul Ellis Nielson, A.B., M.A., Ph.D.
Dorothy Reese Ritzmann, A.B.
David English Smith, Jr., A.B.
David Wilson Talmage, B.S.

ALPHA OMEGA ALPHA

Bernard Bercu
Samuel Bessman
Ivan Brown
David Citron
George Donnell
Raymond Lanier
David LeGrand
Bernard Lieppman
Paul Nielson
Dorothy Ritzmann
David E. Smith, Jr.
Robert D. Lange
David W. Talmage
Albert E. Hensel, Jr.

PRIZES

The George F. Gill Prize for Anatomical Work, Alonza Lewis Farr, B.S.
The George F. Gill Prize in Pediatrics, Samuel Paul Bessman
The Alpha Omega Alpha Book Prize, Robert Dale Lange, A.B.
The Howard A. McCordock Book Prize, John Blasdel Shapleigh, II

STUDENT-FACULTY DINNER

On Monday evening, September 11th, at 7:30 p. m. in the Chase Club of the Hotel Chase, the medical faculty entertained the class of 1944 at dinner. Dr. Carlyle F. Jacobsen, the assistant dean, gave a short history of the class.

Besides honoring the graduates, the alumni of the Medical School who are now serving in the various branches of the armed forces were honored. The faculty and graduates were indeed fortunate in having several of these men return to the city for the dinner. Lt. Col. Franklin E. Walton returned from his present post at the Vaughan General Hospital near Chicago; Colonel Harvey Lester White came from Jefferson Barracks; Captain Frederick Jostes made a flying trip from his Naval headquarters in Washington, D.C.; and Captain Herman Erlanger, who was home on furlough from Australia, attended the dinner with his father, Dr. Joseph Erlanger. The faculty and graduating class appreciated the attendance of these men at the dinner and the short talks which they gave later in the evening, particularly the fine slides which were shown in conjunction with the talk Captain Jostes gave.

Mr. Harry B. Wallace, the Acting Chancellor of the University, and Mr. Daniel N. Kirby, the Chairman of the Corporation Committee on the Medical School, were present and spoke briefly. Dr. Lewis H. Weed, who gave the Commencement Address the following day, was also present.

Dr. Shaffer had displayed for the evening the first flag carried by General Hospital Number 21, the Washington University Unit, now serving in Italy. This flag was returned to the School, on the receipt by the Unit of a new one, and will be treasured by the School.

Appointments for the Class of September, 1944

Armstrong, Bruce W., Saco, Montana—Union Memorial Hospital, Baltimore, Maryland.

Bercu, Bernard, Portland, Oregon—Barnes Hospital, St. Louis 10, Missouri.

Bessman, Samuel P., Newark, New Jersey—St. Louis Children's Hospital, St. Louis 10, Missouri.

Birenboim, Irvin M., St. Louis, Missouri—Jewish Hospital, St. Louis 10, Missouri.

Bisbee, Rowe, Los Angeles, California—Philadelphia General Hospital, Philadelphia, Pennsylvania.

Brown, Ivan E., Webb, Iowa—Iowa Methodist Hospital, Des Moines, Iowa.

Bullock, Albert A., Jr., Milwaukee, Wisconsin—The Milwaukee Hospital, Milwaukee, Wisconsin.

Burch, Buford H., Kansas City, Missouri—St. Luke's Hospital, St. Louis 12, Missouri.

Burress, Julian H., Corinth, Mississippi—Augustana Hospital, Chicago, Illinois.

Callaway, Guy D., Jr., Springfield, Missouri—U. S. Naval Hospital, Puget Sound Naval Base, Bremerton, Washington.

Campbell, James E., Brookfield, Missouri—DePaul Hospital, St. Louis 13, Missouri.

Cassel, William J., Jr., Chicago, Illinois—Jewish Hospital, St. Louis 10, Missouri.

Citron, David S., Charlotte, North Carolina—Barnes Hospital, St. Louis 10, Missouri.

Clough, John, Maysville, Missouri—University of Chicago Clinics, Chicago, Illinois.

Cole, Jack W., Eugene, Oregon—Lakeside Hospital, Western Reserve University, Cleveland, Ohio.

Davis, Edgar W., Givin, Iowa—Missouri Baptist Hospital, St. Louis 8, Missouri.

Davis, James W., Tucson, Arizona—U. S. Naval Hospital, Mare Island, San Francisco, California.

Dehlinger, Klaus, Emporium, Pennsylvania—Evans Memorial Hospital, Boston, Massachusetts.

Deisher, Robert W., Kewanee, Illinois—St. Louis City Hospital, St. Louis 4, Missouri.

Doherty, Dale D., Freewater, Oregon—King County Hospital, Seattle, Washington.

Donaldson, Robert C., Sheldon, Missouri—St. Louis City Hospital, St. Louis 4, Missouri.

Donnell, George Nino, Hollywood, California—St. Louis Children's Hospital, St. Louis 10, Missouri.

Doyle, Joseph P., Jr., East Prairie, Missouri—Barnes and St. Louis Maternity Hospitals, St. Louis 10, Missouri.

Eisenstein, Albert B., Doniphan, Missouri—Jewish Hospital, St. Louis 10, Missouri.

Exon, C. Stuart, Wichita, Kansas—Southern Baptist Hospital, New Orleans, Louisiana.

Fargotstein, Ralph, Pittsburgh, Pennsylvania—Springfield City Hospital, Springfield, Ohio.

Fee, Wesley S., Tucson, Arizona—St. Louis Maternity Hospital, St. Louis 10, Missouri.

Foster, Jack Lee, Lesterville, Missouri—Lutheran Hospital, St. Louis 18, Missouri.

Frost, Jack K., Jacksonville, Illinois—U. S. Naval Hospital, Bethesda, Maryland.

Gallagher, Joseph C., St. Louis, Missouri—Missouri Baptist Hospital, St. Louis 8, Missouri.

Greenberg, Melbourne, Long Island, New York—Sinai Hospital, Baltimore, Maryland.

Hansen, Robert H., San Francisco, California—Franklin Hospital, San Francisco, California.
Henry, Jimmy F., East St. Louis, Illinois—U. S. Naval Hospital, New Orleans, Louisiana.
Hensel, Albert E., Jr., Washington, D. C.—Barnes Hospital, St. Louis 10, Missouri.
Hieb, Wilbert E., Marion, South Dakota—Evangelical Deaconess Hospital, St. Louis 10, Missouri.
Hodge, Robert H., Kansas City, Missouri—Kansas City General Hospital, Kansas City, Missouri.
Hughes, Gerald E., Kansas City, Missouri—St. Louis City Hospital, St. Louis 4, Missouri.
Hunt, Russell B., Clendenin, West Virginia—Charleston General Hospital, Charleston, West Virginia.
Hutchinson, Henry H., Montgomery, Alabama—U. S. Naval Hospital, Pensacola, Florida.
Irving, Edward Palmore, Norfolk, Virginia—U. S. Naval Hospital, Norfolk, Virginia.
Johnston, F. Leon, Vandervoort, Arkansas—St. Louis City Hospital, St. Louis 4, Missouri.
Jolly, William H., St. Charles, Missouri—Missouri Baptist Hospital, St. Louis 8, Missouri.
Jones, Reed W., Denison, Texas—Baylor University Hospital, Dallas, Texas.
Kempinsky, Warren H., Seattle, Washington—King County Hospital, Seattle, Washington.
Kempster, Stephen W., Columbia, Missouri—U. S. Naval Hospital, Bethesda, Maryland.
Kirksey, William A., Fayetteville, North Carolina—Norfolk General Hospital, Norfolk, Virginia.
Kraft, Jacob, Kansas City, Missouri—Research Hospital, Kansas City, Missouri.
Lange, Robert D., Shakopee, Minnesota—Barnes Hospital, St. Louis 10, Missouri.
Lanier, Raymond R., Jr., St. Louis, Missouri—University of Chicago Clinics, Chicago, Illinois.
Lawrence, Fred E., Mobile, Alabama—St. Louis County Hospital, Clayton 5, Missouri.
Lawrence, William Emory, Mobile, Alabama—Hillman Hospital, Birmingham, Alabama.
LeGrand, David D., Port Orchard, Washington—Barnes Hospital, St. Louis 10, Missouri.
Levine, Ervan L., Suffern, New York—St. Louis City Hospital, St. Louis 4, Missouri.
Lieppman, Bernard S., Kansas City, Missouri—Barnes Hospital, St. Louis 10, Missouri.
Ling, Alexander, Long Island, New York—Union Memorial Hospital, Baltimore, Maryland.
Loeb, Virgil, Jr., University City, Missouri—Jewish Hospital, St. Louis 10, Missouri.
Lynch, Patrick, A., Omaha, Nebraska—Cincinnati General Hospital, Cincinnati, Ohio.
Manry, Clayton H., Spring Hill, Alabama—U. S. Naval Hospital, San Diego, California.
Marbury, Benjamin E., St. Louis, Missouri—St. Luke's Hospital, St. Louis 12, Missouri.
Marshall, Homer C., Jr., Longmont, Colorado—Barnes Hospital, St. Louis 10, Missouri.
Mason, Edward Allen, Orange, New Jersey—New Haven Hospital, New Haven, Connecticut.
Meagher, Arthur J., St. Louis, Missouri—St. Louis County Hospital, Clayton 5, Missouri.
Miller, Don Edward, Kingman, Kansas—St. Luke's Hospital, Kansas City, Missouri.
Mills, Mary Alexander, Quincy, Illinois—

Mize, William B., Atchison, Kansas—St. Louis Maternity Hospital, St. Louis 10, Missouri.
Moss, William Thomas, Columbia, Missouri—Barnes Hospital, St. Louis 10, Missouri.
Murfin, Walter W., Decatur, Illinois—Presbyterian Hospital, Chicago, Illinois.
Murphy, John W., Jr., Kirkwood, Missouri—Norfolk General Hospital, Norfolk, Virginia.
Neumann, Roland, St. Louis, Missouri—Barnes Hospital, St. Louis 10, Missouri.
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Owensby, Lindell Cook, Linden, Alabama—Kansas City General Hospital, Kansas City, Missouri.
Palmer, Marion, Multnomah, Oregon—Sacred Heart Hospital, Spokane, Washington.
Payne, John William, Danville, Illinois—St. Louis Maternity Hospital, St. Louis 10, Missouri.
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Roberts, Richard S., Trenton, Missouri—St. Luke's Hospital, Kansas City, Missouri.
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Timrud, David H., Brooklyn, New York—St. Louis County Hospital, Clayton 5, Missouri.
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Walther, Roy A., Jr., Overland, Missouri—Missouri Baptist Hospital, St. Louis, Missouri.
Weisfuse, Louis, Brooklyn, New York—Jewish Hospital of Brooklyn, Brooklyn, New York.
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The Future of the American Hospital

FRANK R. BRADLEY[1]

The future of the American hospital is one with the future of America. As long as our land remains the country of free enterprise, of service, of production, of useful competition, imbued with a spirit of research and with a tolerance of opinion, so will American hospitals and American medicine inevitably follow the same definite pattern. The threat of socialized medicine, the people's desire for leadership and the tradition of our profession indicate the great need and responsibility on our part to stimulate and create a desire in our people for the continuance, constant improvement and growth of free enterprise in American medicine.

It is of primary importance that hospitals be service institutions for the doctor and his patients. In fact the distinguishing feature of a hospital is the nursing service and housing facilities it provides for patients. But nursing, food, shelter and equipment are not enough! It is definitely recognized that the interests of the patients are best served in hospitals which likewise recognize fully the need for medical education in the scientific method. That hospital serves the community more broadly and effectively which does not limit its activities to the care of patients. The training of the intern staff, student nurses, student anesthetists, student dietitians and student administrators provides an incentive to better hospital work. The reputation of a hospital depends in considerable part upon its house of intern staff, which multiplies the service which the hospital can give to the community by helping the hospital to be the long arm of the physician.

The growth of the modern hospital is recent. History tells us that people unable to help themselves, the ill and the infirm, were sent to centers known as Aesculapia or Sanitaria, as far back as the early Grecian days. During the Crusades, such institutions became known as hospitals. Two of the oldest hospitals in existence today are the Hotel Dieu in Paris and St. Bartholomew's in London, which were founded in about 1137. In 1860, when Florence Nightingale gave nursing its impetus, the foundation of modern hospital growth was laid. Upon this foundation, laid by the pioneer work of Miss Florence Nightingale, were erected the walls of the modern hospital, using bricks of scientific fact made possible by the brilliant scientific work of the last half of the 19th century, by Louis Pasteur and Lord Lister. The growth of the edifice was continued until we have

[1] Superintendent of the Barnes Hospital. Reprinted from the Weekly Bulletin of the St. Louis Medical Society, Dec. 10, 1943.

today the magnificent structures we see all over the world which are known as the modern hospital. What is the explanation of the rapid growth of the modern hospital? It is that the hospital does offer a definite service to the community in the care of sick and injured persons.

The hospital is becoming more and more the essential factor in medical care. The future will see the trend accelerate steadily. We have seen a rapid transition from the simple nursing home type of hospital to diagnostic and treatment centers. The very complexity of medical service caused by the rapid advance in medical science, the increased use of diagnostic facilities in the hospital, the change of our mode of living from homes to apartments, hotels, cities and our improved transportation system, particularly due to the automobile and airplane, has shifted the population from the small towns to the cities, thus bringing more patients formerly cared for in the doctors' office and at home to the hospitals. It is certain that this shift of the population to large centers will continue, and certainly travel will become easier and more widespread with the Peace. As hospitals come more and more into use as medical centers, it will undoubtedly be more economical for you to increase your use of the hospital for diagnostic services, and particularly for x-ray and laboratory facilities. The modern hospital is already your service arm. You can treat more patients if there is an intern on constant call for emergencies which arise, to assist at operations, to do dressings, to see that the laboratory work is carried out, etc. The better the hospital and its visiting staff train interns to give this service, the more fortunate is the patient, the doctor, and the hospital.

In the evolution of medical practice, we have seen, in addition to the modern hospital, the growth of many large clinics, such as Mayos, Crile and Lahey. As long as such clinics were comparatively small, hospital facilities outside the clinics were easily available and effectively served, but as these group clinics expanded, it became a definite handicap for the physicians in the clinic to operate and treat patients in several far-separated hospitals. It was only natural that such clinics cast about for their own hospitals. Crile Clinic was the first to have its own hospital facilities. Today a 1200-bed hospital to be operated in conjunction with Mayo Clinic is in the advance planning stage. The hospital will be 18 stories high and will cost $6,000,000. We may take a leaf from the history of our medical schools in their relationship to hospitals and go back to the day when medical schools did not have their own hospitals. The realization of the more efficient conduct of medical schools in conjunction with their own hospitals led to the opening of Johns Hopkins Hospital in 1898. The studies of the Council on Medical Education and Training of the A. M. A.

and Abram Flexner working for the Carnegie Foundation led to the firm conviction that the medical school which had its own hospital or which was affiliated with a teaching hospital was fortunate indeed. The result is that today all of our 77 medical schools have hospital facilities immediately adjacent.

We often hear that hospital costs are high, but it will help us realize how reasonable our charges are when we consider the great amount of personal service given hospital patients. We give a complete 24 hour service by the many departments of the hospital. In all, the average patient requires some part of the working day of approximately 25 individuals. The total of these services in many of the voluntary hospitals today means that an average of as high as 2 employees per patient may be required to care properly for a patient. The great amount of personal service which must be given hospital patients is the chief reason that hospital care costs as much as it does. Yet our charges are lower than hotel charges are for meals served in the room, valet and maid service, and, in addition, we furnish nursing service, intern service, laboratory technicians, dietitians, and often drugs and dressings. Hospitals are proud of that accomplishment. How is this cost met? At the present time, the voluntary hospital depends upon income from patients, income from endowments, gifts, and, in some communities, as in St. Louis, from the Community Chest or United Charities. This is necessary because voluntary hospitals are non-profit institutions, and each year incur an operating deficit. Today there is the tendency for governmental hospitals to take over some of the functions of private voluntary hospitals in treating non-indigent patients requiring care for acute conditions, accidents and elective surgery. Not only do the voluntary hospitals have to meet this situation, but their income from investment and contributions is diminishing.

In conclusion, it is certain that the hospital is becoming the center of medical care. The light of medical education has gone out throughout the world except in Great Britain and the United States, and it is entirely safe to predict that we will become a mecca for medical care. With the airplane, we must expect patients to come to us from all over the globe. In fact, that is happening today in the larger centers. We will also see an extension of governmental hospitals. We have educated our entire population to the need for good medical care and many of them have experienced it. They will never give it up. It is their clamor for medical care that has given rise to the opportunity for the introduction of the Wagner bill. We must meet this threat with improved medical and hospital care on the part of private physicians and voluntary hospitals by the increased use of group insurance, not only for hospital care but for

medical and surgical care. There is no logical reason why we should not also center dental care in the hospital, along with the others specialties such as ophthalmology, otolaryngology, urology, etc. It is not at all an utter impossibility that as hospitals increase in size they will take a leaf from the page of experience of the military and have outlying clinics and small clearing hospitals similar to battalion aid stations and collecting and clearing hospitals which can give either outpatient care and return the patient to his home in the immediate vicinity, or refer him to the central or base hospital for further care, later sending the patient who needs it to his convalescent home.

There must be cooperation, not only in the hospital field, but with medicine and the other sciences, particularly sanitary engineering, public health, etc. "Cooperation, in the attack on difficult scientific problems, between expert investigators in different scientific fields is, of course, good; it occurs all too infrequently. For such cooperation to be effective, however, each of the cooperating scientists must have or must secure an understanding of the language, the problems, and the research methods of the other. This may mean a considerable outlay of time and effort, but the results are generally worth it."[1]

The American people are looking for leadership. We are a people with a long habit of freedom, and we are certain that the present and the future hold securely in our possessions the space to live, a fertile soil, invested wealth, the technical arts, a higher standard of medical and nursing care, which any country has known; in fact, everything that a nation could need. Yet something is lacking. And for want of it, the American people are deeply troubled. We know we are not making the most of our opportunities. The American spirit is troubled not by the dangers and difficulties of the Age, but by indecision. What profession is better adapted to a large share of leadership than that of medicine? The threat of socialized medicine looms large. What better weapon do we have against it than intelligent leadership, a good public relations program and the best of medical and hospital service?

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[1] Huggins, Maurice L., CO-OPERATION BETWEEN THE SCIENCES, Communication No. 934 from the Kodak Research Laboratories.

Case Reports of the Barnes Hospital

Clinical and Postmortem Records Used in Weekly Clinicopathologic Conferences at Barnes Hospital, St. Louis

W. Barry Wood, Jr., M.D., and Robert A. Moore, M.D., Editors

CASE 52

Presentation of Case

A. J., a 53 year old foreman, entered Barnes Hospital on December 24, 1943, and died January 17, 1944.

Chief Complaints: Swelling of legs and abdomen, anorexia, fatigue, and loss of weight.

Family History: Unknown to the patient.

Past History: There were no significant illnesses in the past and the patient had always considered himself in good health. After a high school education, he became a travelling salesman until a few years previous to admission. He then became foreman in a factory that made heavy machinery. He maintained that his work was not tiring. There was no exposure to chemicals or fumes. He drank an occasional glass of beer, little whiskey, and he smoked moderately. He had taken no drugs for years. His diet appeared adequate although he had not been fond of meat. Venereal disease was denied.

Present Illness: The patient dated the onset of present illness 7 to 8 months previous to admission (spring, 1943) when he experienced undue fatigue during the afternoon. His appetite became indifferent. A few weeks thereafter, slight swelling of his ankles was noted at bedtime. During the next few months, this swelling became more pronounced and gradually involved the legs. About August, 1943, he experienced some fullness in his abdomen which, he maintained, was due to gas. This was increased on a self-imposed milk diet. He stated that in September his skin became somewhat yellow. His urine then was dark and his stools light in color. No itching was present. At this time the patient consulted a physician who sent him to a hospital. There, after roentgenographic studies, he was told that his gall bladder was not functioning and that liver disease and tuberculosis were suspected. His abdomen was tapped and about 3 quarts of yellow fluid were withdrawn. He remained in the hospital for 2 weeks under dietary and medicinal treatment and the yellow discoloration cleared. Soon after returning home, in October, abdominal distention, flatulence, loss of apptetite, loss of weight and weakness confined

him to bed. Vomiting without nausea, soon after eating, occurred occasionally. These symptoms gradually progressed until admission.

Physical Examination: T. 36.8° P. 90 R. 20 BP 118/90.

The patient was a gaunt middle-aged man with wasted muscles and a distended abdomen. The complexion was sallow. He appeared to be comfortable. The skin was somewhat dry and there was some loss of subcutaneous fat. The sclerae were clear. The pupils and eye grounds appeared normal. The lips were dry and cracked. The tongue was dry and red and there was a small ecchymotic area in the right buccal mucosa. The lungs showed no abnormalities. The heart was not enlarged, the rhythm was regular, the sounds were of fair quality; there was a soft systolic murmur at the apex, not well transmitted. The abdomen was considerably distended and signs of fluid were present. Moderately distended veins appeared over the abdomen and lower thorax. No organs or masses were felt. The prostate gland appeared normal. No hemorrhoids were present. There was no edema of the ankles. Neurological examination revealed no abnormalities.

Laboratory Findings: Blood count—red cells 4,450,000, hemoglobin 14.9 grams, white cells 9,600, differential count: basophils 2%, eosinophils 5%, "stab" forms 9%, segmented forms 66%, lymphocytes 12%, monocytes 6%. *Urinalysis* negative. *Stool* benzidine test +, guaiac test 0. *Kahn* reaction negative. *Blood chemistry*—sugar 108 mg%, nonprotein nitrogen 38 mg%, total proteins 5.6 gms%, albumin 2.0, globulin 3.6, icterus index 20, serum calcium 8.8 mg%, serum phophorus 3.2 mg%, serum phosphatase 1 Bodanski unit. Cephalin flocculation test ++++, hippuric acid test 0.9% excretion of sodium benzoate. *Oral hippuric acid test* 24% excretion. *Prothrombin time* 35 seconds, control 30 seconds.

Course in Hospital: Soon after admission, an abdominal paracentesis was done and 2,500 cc. of clear straw-colored fluid were removed. This fluid had a specific gravity of 1.005, protein 1%, and yielded no growth on culture. No tumor cells were seen in sections of the sediment. On a diet high in carbohydrate and protein, without animal fat, supplemented by asein, vitamins and choline, there was no appreciable improvement. The patient's appetite was poor, vomiting occurred occasionally, and redistention of the abdomen was obvious. On January 3rd, a second abdominal paracentesis produced 7,500 cc. of clear, straw-colored fluid. The protein content was 1.2%; the culture was sterile. Urinary output became diminished. This was corrected temporarily by injections of salyrgen. The legs became somewhat edematous and the hands swollen but there was no pitting on pressure. The blood proteins the day before death were 4.8 gms%, albumin 1.6, globulin 3.2. Non-protein nitrogen was 42 mg%. The urine at that time contained no albumin or casts. The patient gradually lost ground, became drowsy, and lapsed into stupor from which he did not recover.

Clinical Discussion

DR. HARRY ALEXANDER: The clinical diagnosis in this case was portal cirrhosis of the liver. Are there any other suggested diagnoses, or is this to be accepted?

DR. CARL MOORE: I think it is highly probable that the patient had cirrhosis of the liver, but I do not think carcinoma, particularly with hepatic involvement, can be ruled out entirely.

DR. ALEXANDER: What is in favor of it?

DR. CARL MOORE: Carcinoma occasionally metastasizes to the regions around the hilum of the liver, and by producing increased portal venous tension and partial obstruction, causes jaundice.

DR. ALEXANDER: It is true, is it not, that primary carcinoma of the liver occurs in cirrhosis? Is there anything else in favor of carcinoma of this case?

DR. BERTRAND GLASSBERG: The protein content of the fluid is a little high for a simple transudate.

DR. CARL MOORE: This can occur, especially with a low specific gravity.

DR. EDWARD MASSIE: Vomiting as a symptom is not common in cirrhosis of the liver, except terminally. This patient began to vomit about two months before death. He did not have sufficient elevation of non-protein nitrogen at that time to cause vomiting.

DR. ALEXANDER: Do patients with carcinoma of the liver vomit?

DR. MASSIE: Yes, but patients with cirrhotic livers usually do not.

DR. ALEXANDER: The thing that struck me was that the symptoms began eight months before death. The patient was tapped only three times. Isn't that a very rapid development for cirrhosis of the liver?

DR. MASSIE: Yes.

DR. ALEXANDER: Do you agree, Dr. MacBryde?

DR. CYRIL MACBRYDE: Yes. Ordinarily cirrhosis is likely to go on for a good many years.

DR. ALEXANDER: As a matter of fact, when this patient was tapped only 2500 cc. of fluid were secured. There was more and he was tapped again, but even then the amount of fluid was not great. The ascites was rather small in amount for cirrhosis.

DR. CARL MOORE: On the question of duration, Fleming and Snell reported in 1942 a series of 50 patients with cirrhosis, from the Mayo Clinic, on whom they tried the new dietary therapy. Thirty were dead within a year.

DR. ALEXANDER: With or without the therapy?

DR. CARL MOORE: Both. Ratnoff and Patek state that only 30 per cent of 296 patients with cirrhosis were alive 12 months after the onset of ascites, and only 24 per cent of 245 were alive 12 months after the onset of jaundice. Clinically we may be too much impressed with the cases that go on for a long time.

DR. ALEXANDER: I am surprised at those figures. As I say, this patient's illness struck me as being rapid for cirrhosis, as compared with many cases that I recall clinically. I still feel that for a case which has progressed to the point where paracentesis is necessary, only three paracenteses are rather few.

DR. MASSIE: How important statistically is the absence of a strong alcoholic history in this patient? I am thinking of alcohol as a causal factor. In a report by Bloomfield of California there was a history of alcoholism in a little over 65 per cent in a large series.

DR. CARL MOORE: In various figures from the United States, listing 7 different cities, the percentage of patients with cirrhosis who were chronic alcoholics varied from 45 to 86 per cent. In Canada and England the figures were roughly comparable. But in countries like Turkey and China, where deficient diets are an important factor in cirrhosis, the percentage of chronic alcoholics is only about 2 to 20 %.

DR. ALEXANDER: What about the fact that this patient had jaundice at one time, which later cleared up? Does that have relevance?

DR. MASSIE: I don't think it's unusual to have a history of some jaundice.

DR. HAROLD SCHEFF: I think it is compatible. Patients with cirrhosis usually have one or two bouts of jaundice, before the terminal jaundice.

DR. ALEXANDER: How do you explain this transient jaundice?

DR. SCHEFF: It was probably due to some acute condition.

DR. GLASSBERG: At the time this patient was admitted there was no mention of jaundice, but the icterus index was in the range where jaundice might be expected. He may have had some jaundice.

DR. ALEXANDER: Yes, it may not have been noticeable. I think we may assume that this patient had hepatic cirrhosis, and had lost some of the functions of his liver. There are so many hepatic functions tests, that it would be interesting to know which are the more important, and what each of them signifies. Dr. Moore, what do you think is the most valid?

DR. CARL MOORE: The most sensitive tests are probably the cephalin flocculation, the intravenous hippuric acid, and the fractional bromsulfalein in which determinations are made every 5 to 10 minutes for 30 minutes. In these tests there is a higher degree of correlation with autopsy diagnosis than with any others.

DR. ALEXANDER: What does a positive cephalin flocculation test signify?

DR. CARL MOORE: It signifies parenchymal hepatic damage. The mechanism of the flocculation is unknown, but it is probably associated with an abnormal globulin fraction in the serum.

DR. ALEXANDER: Do you believe the hippuric acid should be given intravenously rather than orally?

DR. CARL MOORE: The test is more sensitive when the sodium benzoate is given intravenously, because the factor of absorption is eliminated.

DR. ALEXANDER: What are normal values for hippuric acid excretion?

DR. RALPH SMITH: 1.77 grams of sodium benzoate in 20 cc. is given intravenously and 0.7 grams of hippuric acid should be excreted in the urine.

DR. ALEXANDER: What function of the liver is tested by the fractional bromsulfalein test?

DR. CARL MOORE: The test is an expression of excretory function of the liver, more specifically the ability to excrete the bile pigments. There should be no retention at 15 minutes, and certainly none at 30 minutes.

DR. ALEXANDER: What about the test for total proteins? It is always done, and the proteins are fractionated.

DR. CARL MOORE: It is a very good test in that it indicates, when the albumin fraction is low, that there is a good degree of hepatic insufficiency. The albumin does not become low until the hepatic insufficiency has proceeded to a fairly marked degree.

DR. ALEXANDER: Is it established that the liver ordinarily synthesizes amino acids into albumin, and that it loses this function in hepatic insufficiency, causing the low albumin?

DR. CARL MOORE: Dr. Whipple and Dr. Madden believe this to be the case, although proof may not be 100 per cent certain.

DR. ALEXANDER: Dr. Bulger, do you agree that this is the accepted interpretation of the low albumin in hepatic dysfunction?

DR. BULGER: The evidence is suggestive, although not conclusive.

DR. ALEXANDER: Dr. McQuiddy and Dr. Norman Keith reported a few values of extremely low total proteins in one case, only one per cent. At autopsy in these cases the liver had an unusual appearance. It looked like heart muscle. The parenchyma was splintered. All the livers had this same lesion. McQuiddy and Keith inferred that there is a definite relation between the liver and the manufacture of blood proteins, at least of albumin. What about the prothrombin time as a test for liver function?

DR. CARL MOORE: It is disturbed only in relatively advanced hepatic

insufficiency. For that reason it is not too good a test except for severe degrees of insufficiency.

DR. ALEXANDER: There are many other tests, but are there others of particular interest?

DR. CARL MOORE: I think those are the most important, although perhaps blood amylase determination should be done. The staff at City Hospital and at Jewish Hospital believe that blood amylase belongs with the top three as a sensitive indicator of insufficiency, and that a low amylase is indicative of insufficiency.

DR. ALEXANDER: This patient's blood proteins were not excessively low. He was not edematous, except toward the end. The cephalin flocculation and the intravenous hippuric acid tests were abnormal, the fractional bromsulfalein test was not done, the prothrombin time was equivocal, and the total protein determination was equivocal. The inference from these tests is that this patient's liver was only slightly damaged.

STUDENT: The report says the oral hippuric acid was 24 per cent, and the intravenous only .9 per cent. Isn't this a great discrepancy?

DR. RALPH SMITH: The duration of the oral test is much greater. The intravenous test takes only an hour, and only one sample of urine is used.

DR. KEITH WILSON: I think one can make a diagnosis of liver damage on the basis of the albumin-globulin ratio, which is usually reversed or very low in cirrhosis. Dr. Wade at City Hospital, who has had considerable experience in this field, finds that cephalin flocculation is important in making a diagnosis of cirrhosis of the liver, but that the albumin-globulin ratio is even more helpful. If it runs under 1.3 there is fair evidence that the liver is markedly damaged. In this case the ratio is reversed.

DR. GLASSBERG: Is it true that in nephritis the albumin-globulin ratio is reversed without liver damage?

DR. ALEXANDER: Yes, if the proteins are lost.

DR. GLASSBERG: Can we be sure that the decreased protein in this patient is entirely the result of liver damage? There was only one urine examination recorded.

DR. ALEXANDER: If we cannot make a laboratory diagnosis of cirrhosis of the liver, what are we going to call this? Clinically, it is a typical case of cirrhosis of the liver. The laboratory findings all tend to support this diagnosis. Dr. Glassberg, you feel that this man may have had renal damage. His nonprotein nitrogen was 42 mg% and there was only one urine specimen, which contained very little or no albumin. An albuminuria would certainly be present if the disturbed albumin-globulin ratio was the result of kidney damage.

DR. KURT SOLOMON: The patient was said to have had dark urine at one time. This finding suggests that he may have had porphyrinuria.

DR. ALEXANDER: His urine was not recorded as being dark while he was in the hospital.

DR. SOLOMON: Porphyrinuria may occur even though the color is not noticeably dark.

DR. ALEXANDER: Your point is that increased excretion of porphyrins is a good indication of liver damage?

DR. SOLOMON: Yes.

DR. JOHN SMITH: This patient's main complaint was fatigue, at least in the beginning. In subacute yellow atrophy of the liver fatigue is the first complaint. This patient had recently changed his job, and had begun working in a factory, where it is possible he might have handled benzene or some other substance that produces subacute yellow atrophy. The jaundice occurred rather early, which is typical of subacute yellow atrophy. The liver damage may then have resulted, in the form of cirrhosis. He might have had an acute exacerbation of subacute yellow atrophy at the time of his final illness.

DR. ALEXANDER: How common is ascites in this condition?

DR. SMITH: It depends upon whether or not the process is acute. In this case it is assumed that the patient had subacute yellow atrophy with remissions and exacerbations.

DR. ALEXANDER: I should think there would have to be more jaundice.

DR. SMITH: Cases have been reported with no jaundice at any time.

DR. ALEXANDER: Your point is a good one. This might more safely be called toxic hepatitis. Do you expect this man to have cirrhosis or toxic hepatitis, as revealed by the autopsy?

DR. SMITH: I think most of the changes will be those of cirrhosis.

DR. ALEXANDER: This man failed to improve on choline and low animal fat. What is the rationale of giving choline chloride to these patients, Dr. Massie?

DR. MASSIE: I think it is that the cirrhotic liver is unable to synthesize choline per se. I believe there is a deficiency in the ability of the liver to produce amino acids, and also choline.

DR. ALEXANDER: One of the greatest advances in modern medicine has been the treatment of patients with cirrhosis of the liver, which otherwise would have been fatal, by the administration of choline together with vitamins and low fat diet. Dr. Moore, does choline in your opinion do more than supply the liver with what is missing?

DR. CARL MOORE: I do not believe that anyone knows what choline does. In choline-deficient animals there is fat infiltration of the liver, as well as cirrhosis. The first thing which disappears after choline administration is the fat infiltration. Whatever cirrhosis has already appeared is permanent, but no further cirrhosis occurs. Both choline and methionine, a sulfur-containing amino acid, have the same effect.

DR. ALEXANDER: Can you add anything, Dr. Bulger?

DR. HAROLD BULGER: I do not think so. Choline will prevent fatty livers under certain experimental conditions.

DR. ALEXANDER: How important are vitamins in these cases?

DR. CARL MOORE: Apparently the clinical observations confirm the experimental results—that cases of cirrhosis improve when the B complex is also provided. Which members of the B complex are effective is a matter of conjecture. A number of people insist on liver extract as well as crystalline extracts.

DR. ALEXANDER: In treating a case of cirrhosis of the liver of some duration, what would you consider the most important measures?

DR. CARL MOORE: Probably first to cut out cholesterol, because that definitely accelerates the cirrhotic process; second, to provide choline; third, to give a high carbohydrate-protein diet, because it protects the liver against further damage; and fourth, to give crude liver extract.

DR. ALEXANDER: How much choline would you give?

DR. CARL MOORE: One gram a day.

DR. ALEXANDER: If more were given signs of sudden acetylcholine effects might appear. What vitamin intake would you advocate?

DR. CARL MOORE: I would give crude B complex—brewers' yeast—at least three tablespoons a day. The important thing is to give large amounts.

DR. MASSIE: Isn't vitamin A important, too? The liver stores about 75 or 85 per cent of the vitamin A in the body. It is deficient in the liver of a cirrhotic patient. Usually one gives 50,000 units of vitamin A a day. Patek advises this dosage.

DR. ALEXANDER: The treatment has worked almost magically in many cases we have had here. Are there any further remarks about this case? What about the coma?

DR. MASSIE: A patient dying in coma with liver insufficiency suggests so-called liver death, or hepatorenal syndrome. It is a well-established clinical picture. It is seen more dramatically in surgery when patients die with high temperature, anuria, and marked liver failure following gallbladder operations. This patient may have died with that syndrome. A failing liver does produce, or because of lack of elimination, allows to re-

main in the body certain toxic substances that have a direct effect on the tubules of the kidney and result in low renal output, and nonprotein nitrogen retention. There is usually a great deal of tubular damage in the kidney.

Clinical Diagnosis

Laennec's cirrhosis of the liver.

Dr. Alexander's Diagnosis

Portal cirrhosis.

Anatomic Diagnosis

Nodular cirrhosis of liver.
Chronic passive congestion of spleen.
Ascites (8000 cc.)
Bronchopneumonia of lower lobe of right lung.

Pathologic Discussion

Dr. Margaret Smith: The cirrhosis in this patient was active as shown by conspicuous proliferation of bile ducts, necrosis of hepatic cells, and infiltration with lymphocytes. The proof of portal hypertension is given in the findings of ascites and chronic passive congestion of the spleen. The immediate cause of death was a bronchopneumonia.

News from the Medical School and Affiliated Hospitals

The following promotions in the staff have been made for 1944-45: Dr. John Van Dyke to Assistant Professor of Anatomy; Dr. Clinton W. Lane to Assistant Professor of Clinical Dermatology; Dr. Edward Massie to Assistant Professor of Clinical Medicine; Dr. George Saslow to Assistant Professor of Psychiatry; Dr. J. G. Probstein and Dr. E. L. Keyes, Jr. to Assistant Professor of Clinical Surgery; Dr. H. Relton McCarroll to Assistant Professor of Clinical Orthopedic Surgery; Dr. Justin J. Cordonnier and Dr. John F. Patton to Assistant Professor of Clinical Genitourinary Surgery (on leave of absence for military service); Dr. Eugene M. Bricker to Assistant Professor of Clinical Surgery (on leave of absence for military service).

New appointments to the staff include: Dr. Paul R. Patek as Visiting Associate Professor of Anatomy; Dr. Wayne P. Sirles as Instructor in Otolaryngology; Miss Dorothy Ziegler as Assistant in Anatomy; Dr. I. J. Flance as Assistant in Clinical Medicine; Dr. Francis R. McFadden as Assistant in Obstetrics and Gynecology; Dr. Sol Spiegelman as Assistant in Bacteriology and Immunology; Dr. Esther Sturgeon as Assistant in Psychiatry; Mrs. Lucille L. Spitz, Psychologist in the Department of Neuropsychiatry; Mrs. Barbara Watson as Research Assistant in Medicine; Dr. Edwin E. Garrett as Assistant in Ophthalmology; Miss Jean Peterson as Research Assistant in Pathology; Miss Louise Miller as Research Assistant in Pediatrics; Dr. W. W. Pettus as Visiting Fellow in Chest Surgery; Dr. Ernesto M. Osacar as Visiting Fellow in Plastic Surgery.

Leaves of absence for duty in the armed forces have been granted to the following: Dr. Alfred Large, Instructor in Clinical Surgery; Dr. Arthur T. Esslinger, Assistant in Clinical Obstetrics and Gynecology; Dr. David Goldring, Assistant in Pediatrics; Dr. Gordon Letterman, Assistant in Surgery; Dr. Charles Lockhart, Assistant in Surgery; Dr. Robert A. Harris, Dentist in Pediatrics; Miss Anne M. Perley, Instructor in Biological Chemistry in Pediatrics.

The following have resigned from the staff: Dr. H. B. G. Robinson, Associate in Pathology; Dr. Charlotte McLeod, Research Associate in Medicine; Dr. Luis F. Leloir, Research Associate in Biological Chemistry; Dr. Tom Black, Assistant in Otolaryngology; Mrs. Sylvia Broady, Research

Assistant in Pathology; Dr. Anibal Roberto Valle, Fellow in Chest Surgery.

The following gifts to the School of Medicine were announced between July 1 and September 7, 1944: from the William S. Merrell Company, $1,500 for support of investigations of the effect of sulfonamide solution on sinusitis under the direction of Dr. T. E. Walsh in the Department of Otolaryngology; from the John and Mary R. Markle Foundation, $1,230 for continuation of support of studies of behavior and growth of tumors of the nervous system by Dr. William O. Russell in the Department of Pathology; from Mr. Ingram F. Boyd, $1,000 which is to be added to the Evarts A. Graham Fund in Surgery; from Eli Lilly and Company, $1,200 to continue clinical studies on insulin mixtures by Dr. Cyril MacBryde in the Department of Internal Medicine; from Winthrop Chemical Company, $1,200 for continuation of a fellowship in the Department of Internal Medicine for investigation under Dr. Cyril MacBryde.

The Department of Obstetrics and Gynecology announces that the William S. Merrell Company has established a fellowship under Dr. Willard M. Allen for the investigation of synthetic estrogens.

Recent Acquisitions by the Library

Possession does not imply approval

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Publications by the Staff of the School of Medicine

June-August, 1944

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Alexander, H. L., Gildea, E. F., Jones, A. B., et al. Dermatomyosistis involving skeletal and cardiac muscle; atrophy of the muscles of the shoulder girdles, hands, forearms, feet and calves of the legs; degeneration of myelin sheaths of peripheral nerve, slight; broncho-pneumonia of the lower lobe of the left lung. (Barnes case 47) J. Missouri M. A., 41: 119-143, June, 1944.

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Appointments to the House Staff

OCTOBER 1, 1944

In Surgery at the Barnes and St. Louis Children's Hospitals

Assistant Residents:

R. Leonard Kemler, Yale University School of Medicine, March '43
Allyn Jay McDowell, Washington University School of Medicine, March '43
Richard T. Odell, Washington University School of Medicine, March '43
Alfred M. Decker, Jr., University of Rochester School of Medicine, December '43
Frederick J. Gray, Jr., Vanderbilt University School of Medicine, December '43
Joseph C. Peden, Harvard Medical School, December '43

Interns:

Harvey R. Butcher, Harvard Medical School, September '44
James T. Chamness, University of Pennsylvania Medical School, September '44
Sanford Roy Dietrich, Yale University School of Medicine, September '44
Milton T. Edgerton, Johns Hopkins University School of Medicine, August '44
George E. Gillespie, Vanderbilt University School of Medicine, September '44
Boyce L. Hanks, Harvard Medical School, September '44
William H. Moncrief, Emory University School of Medicine, September '44
William T. Moss, Washington University School of Medicine, September '44
Roland F. Neumann, Jr., Washington University School of Medicine, September '44
Thomas B. Sappington, Jr., Vanderbilt University School of Medicine, September '44

In Medicine at the Barnes Hospital

Resident on Ward Service:

Llewellyn Sale, Jr., Washington University School of Medicine '40

Assistant Residents on Ward Service:

Ralph O. Smith, University of Chicago School of Medicine, March '43
David Graham, Washington University School of Medicine, December '43
Edwin Krebs, Washington University School of Medicine, December '43
Bernard C. Holland, Emory University School of Medicine, December '43

Interns on Ward Service:

Bernard A. Bercu, Washington University School of Medicine, September '44
Albert E. Hensel, Washington University School of Medicine, September '44
Robert D. Lange, Washington University School of Medicine, September '44
David D. LeGrand, Washington University School of Medicine, September '44
Bernard S. Lieppman, Washington University School of Medicine, September '44
Robert Paine, Harvard Medical School, September '44

Resident on Private Service:

Donald Huelsmann, Washington University School of Medicine, March '43

Assistant Residents on Private Service:

John H. Eisenhauer, Washington University School of Medicine, December '43
James F. Tagge, Washington University School of Medicine, December '43
Herbert C. Wiegand, Washington University School of Medicine, December '43

Interns on Private Service:

David S. Citron, Washington University School of Medicine, September '44
Homer C. Marshall, Washington University School of Medicine, September '44
Robert B. Perkins, Washington University School of Medicine, September '44
Janet Scovill, Columbia University, College of Physicians and Surgeons, December '43
Wayne A. Simril, Washington University School of Medicine, September '44
Albert Stewart, Washington University School of Medicine, September '44
John D. Talbert, Harvard Medical School, September '44

IN PEDIATRICS AT THE ST. LOUIS CHILDREN'S HOSPITAL

Resident:
William G. Klingberg, Washington University School of Medicine, March '43

Assistant Residents:
Gerald J. Conlin, Washington University School of Medicine, March '43
Dorothy M. Case, Washington University School of Medicine, March '43
James N. Etteldorf, University of Tennessee School of Medicine '42
Harry J. Lawler, Washington University School of Medicine, December '43

Junior Residents:
Julius K. Neils, Washington University School of Medicine, December '43
Helen E. Yeager, Washington University School of Medicine, December '43
Margaret L. Rathbun, University of Rochester School of Medicine, December '43
Margaret F. Meyn, Washington University School of Medicine, December '43

Interns:
Samuel P. Bessman, Washington University School of Medicine, September '44
George N. Donnell, Washington University School of Medicine, September '44

IN NEUROPSYCHIATRY AT THE BARNES AND MCMILLAN HOSPITALS

Resident:
Gerard Fountain, Yale University School of Medicine, March '43

Assistant Residents:
Louis A. Gottschalk, Washington University School of Medicine, December '43
C. Wesley Watson, Yale University School of Medicine, December '43

IN RADIOLOGY AT THE BARNES HOSPITAL

Resident:
James A. Read, Washington University School of Medicine, March '43

IN DENTISTRY AT THE BARNES HOSPITAL

Resident:
R. Jerry Bond, Washington University School of Medicine '41

IN GYNECOLOGY AT THE BARNES HOSPITAL AND OBSTETRICS AT ST. LOUIS MATERNITY HOSPITAL

Residents:
Julius W. Vieaux, Washington University School of Medicine, '35
Seymour Monat, Long Island College of Medicine '39

Assistant Residents:
William Masters, University of Rochester School of Medicine and Dentistry, March '43
David Blanchet, University of Rochester School of Medicine and Dentistry, December '43
Francis R. McFadden, University of Iowa College of Medicine, March '43

Interns:
Joseph P. Doyle, Washington University School of Medicine, September '44
Wesley S. Fee, Washington University School of Medicine, September '44
William B. Mize, Washington University School of Medicine, September '44
John W. Payne, Washington University School of Medicine, September '44
Marvin Pursell, Washington University School of Medicine, September '44

IN OTOLARYNGOLOGY AT THE MCMILLAN, BARNES AND ST. LOUIS CHILDREN'S HOSPITALS

Resident:
Henry A. Uhlemeyer, Washington University School of Medicine, March '43

Assistant Residents:
Ludwig A. Furchgott, New York University College of Medicine, March '43
Jack S. Ingram, Washington University School of Medicine, December '43
William K. Wright, Northwestern University Medical School, April '43

IN OPHTHALMOLOGY AT THE MCMILLAN, BARNES AND ST. LOUIS CHILDREN'S HOSPITALS

Assistant Residents:
Frances Chappell, Washington University School of Medicine, December '43
Philip Shahan, Washington University School of Medicine, '42
Edwin Garrett, University of Texas Department of Medicine, July '43

IN PATHOLOGY AT THE BARNES, ST. LOUIS CHILDREN'S, ST. LOUIS MATERNITY, AND MCMILLAN HOSPITALS

Resident:
William Callahan, Washington University School of Medicine, March '43

Intern:
David E. Smith, Washington University School of Medicine, September '44

WASHINGTON GRADUATES WHO HAVE BEEN CERTIFIED BY MEDICAL SPECIALTY BOARDS ACCORDING TO DIRECTORY OF 1942

CLASS	Anesthesiology	Dermatology-Syphilology	Internal Medicine	Neurological Surgery	Obstetrics Gynecology	Ophthalmology	Ortho. Surgery	Otolaryngology	Pathology	Pediatrics	Plastic Surgery	Psychiatry and Neurology	Radiology	Surgery	Urology	Total No. of Specialists	Living Members January '44
1937								3					2			5	94
1936						2				1			3			6	95
1935					1			2		2			4			9	92
1934		1	2			3		1		6			1	2		16	90
1933		1	1		2			5	1	5			3		1	19	91
1932				1	2	1		2		2	1		1	1		11	86
1931			2		2		1			3		1	2		1	12	75
1930		1	3	1	1	1	2	1		2		1	1	1		15	75
1929			1			2	2	2	2	1			2	4		16	75
1928		1			5	1		1	1	1		1	2		5	18	69
1927		1	1		1	1		3	1	2		1	2	4		17	73
1926					2	1	2	2	1	3				3		14	73
1925			2		4		1	3		5	1			1	2	19	69
1924			1		3	1	1	1		2	1	1	1	2		14	70
1923					1					2		1	3	2	1	10	50
1922		1	2		1	3		2		1					1	11	45
1921			1	1	2	1			1	4			2			12	44
1920			5			2	1		1	2				3		14	39
1919			2		1	1		2		3		2	1	3	1	16	46
1918			3			2							2	2		9	26
1917		1	1		1					2		1		2		8	26
1916			1		2									1		4	14
1915			2				1			1				2	1	7	22
1914			1													1	10
1913			2					3		1			1	1		8	27
1912			2				1	2					1	1		7	36
1911			1			2	1	1				2				7	24
1910			1		1	2		2				1	1			8	42
1909		1	1			1		1								4	35
1908							1	1				1		1		4	36
1907			3		1							1			2	7	34
1906			1					1		1						3	37
1905			2		1	3		2	1				1			10	37
1904			2		1	2		1						1		7	38
1903						1										1	25
1902			1			1	1					1	1	1		6	29
1901						1	1	1		1						4	25
1900						1										1	4
MM99								1		1						2	28
WU99			1													1	13
MM98						1										1	38
WU98						2										2	14
MM97					1	1										2	28
WU97													1			1	15
MM96						1										1	22
WU96			2					1								3	14
MM95										1				1		2	26

WASHINGTON GRADUATES WHO HAVE BEEN CERTIFIED BY MEDICAL SPECIALTY BOARDS ACCORDING TO DIRECTORY OF 1942

CLASS	Anesthesiology	Dermatology-Syphilology	Internal Medicine	Neurological Surgery	Obstetrics Gynecology	Ophthalmology	Ortho. Surgery	Otolaryngology	Pathology	Pediatrics	Plastic Surgery	Psychiatry and Neurology	Radiology	Surgery	Urology	Total No. of Specialists	Living Members January '44
WU95						1										1	11
MM94			1													1	16
WU94			1													1	6
MM93																0	15
WU93								1								1	6
MM92																0	2
WU92					1											1	5
MM91						1										1	21
WU91						2										2	7
MM90						1										1	7
St90																0	2
MM89						1		1								2	15
St89																0	0
MM88																0	13
St88																0	2
MM87																0	13
St87																0	3
MM86			1													1	7
St86																0	3
MM85																0	10
St85																0	2
MM84																0	9
St84																0	4
MM83																0	10
St83																0	5
MM82																0	4
St82																0	1
MM81																0	4
St81																0	4
MM80																0	5
St80																0	2
MM79																0	2
St79		1														1	3
MM78																0	2
St78																0	0
MM77																0	1
St77																0	0
MM76																0	0
St76																0	0
MM75																0	1
St75																0	0
MM74																0	0
St74																0	0
MM73																0	0
St73																0	1
TOTALS	0	9	53	3	37	47	16	49	9	55	3	15	38	39	15	388	2300

News of Alumni

1879

Dr. Joseph Grindon's new address is 921 Missouri Theatre Bldg., St. Louis 3, Mo.

1890

The Alumni Office received the following interesting information concerning Dr. William Shirmer Barker who died recently. He practiced medicine in St. Louis since 1891. He was a member of the Volunteer Medical Service Corps in 1918, acting assistant surgeon, U. S. Public Health Service during influenza epidemic, 1918-1919, and was the first president of the St. Louis City Hospital Medical Society. His father, William Spafford Barker, who graduated from medical school in 1850, practiced medicine at Galena, Illinois, and later in St. Louis. He was a surgeon on General Halleck's staff of the Army of the Tennessee in 1862, as well as chief surgeon on the hospital steamer "Champion" in 1862, visiting officially the hospitals in the field of the Army of the Department of the Mississippi; and was surgeon of the 13th Regiment: Enrolled Militia of Missouri, 1864. One of William Shirmer Barker's sons, Paul, graduated from Washington University Medical School in 1920, and is physician in the Division of Internal Medicine at the University of Michigan.

1883

Rollin S. Fillmore, Willmore Hotel, Apt. 1001, Long Beach 2, California, writes: "I am a graduate of the Missouri Medical College of St. Louis—Class of 1883. I practiced medicine for forty-six years at Blue Rapids, Kansas. In 1929 I retired to long Beach where I have lived since. My son Rollin S., who graduated from Washington University in 1912 is now a Transport Surgeon somewhere on the broad Pacific and has been for the last two years. My father R. S. Fillmore was an M.D.—I am an M.D.—My son, now Major, is an M.D., and his son is an M.D. at Queen's Hospital, Honolulu. This makes four generations of doctors from the Fillmore family since 1847. Can you beat this?"

1898

Carl E. Dudley's new address is: 3733 Lindell Blvd., St. Louis 8, Missouri.

1901

Julien A. Gehrung's new address is: P. O. Box 1300, Paterson 13, N. J.

1909

Colonel Millard F. Arbuckle's new address is: 7118 Washington Ave., St. Louis 5, Mo.

1911

Clyde P. Dyer's new address is: 307 Metropolitan Bldg., 508 North Grand, St. Louis 3, Missouri.

1912

Lieutenant George L. Watkins of Farmington, Mo., and now a Navy doctor, administered first aid to 13 wounded Marines under fire on Guam and helped carry them to safety as Japanese bullets whizzed about him, a dispatch from a Marine combat correspondent related today. Five enemy tanks crashed into the Marines' bivouac area, blasting the Americans' foxholes. Lt. Watkins, a veteran of the Bougainville campaign, and two navy medical corpsmen rescued the wounded from beneath the guns of the attacking tanks.

1916

William C. Pollock is commanding officer of a general hospital in the South Pacific.

1919

Arthur C. Brooks has a new address: 4129a San Francisco Ave., St. Louis 15, Missouri.

1920

Hiram S. Liggett, Beaumont Bldg., St. Louis, Mo., Class Secretary.

P. H. Kennedy's new address is: R. D. #1, Hubbard, Ohio.

Colonel Harvey L. White is Commanding Officer of the Station Hospital at Jefferson Barracks, Missouri.

1921

William Benjamin Lewis is a major in the Medical Corps.

1922

James B. Costen read a paper on August 16 before the National Medical Association, entitled "Ethmoiditis in Children." He addressed the section of otolaryngology of the Wisconsin State Medical Society, at Milwaukee, Wisconsin on September 20. The subject was "Diagnosis of Mandibular Neuralgia and Its Place in General Head Pain." On September 27, he discussed "The Diagnosis of Concussion Deafness," before the weekly medical conference at Jefferson Barracks, Colonel H. Lester White presiding.

1924

T. K. Brown, 630 S. Kingshighway, St. Louis, Mo., Class Secretary.

P. C. Gatterdam's new address is: 2539 Edgewood Place, LaCrosse, Wis.

Lawrence M. Knox is at Mission Hospital, Florence Ave. and Mission Pl., Huntington Park, California.

1925

Myron Davis, 3720 Washington St. Louis, Mo., Class Secretary.

Allen N. Roe's new address is: 1111 N. Park Pl., St. Louis 7, Mo.

1927

Commander C. K. Higgins's new address is: U. S. Fleet Hospital #111, c/o Fleet Post Office, San Francisco, California. He has been on active duty in the Navy since February, 1941.

Major Louis N. Claiborn is chief of the plastic surgery section of a general hospital.

1928

Major A. N. Arneson's address is Ft. Sam Houston, Texas.

Brig. General Earl Maxwell is chief surgeon and senior flight surgeon in the South Pacific war theatre.

Major Ronald F. Elkins has a new address: 177th Gen. Hosp., Camp Barkeley, Abilene, Texas.

1929

L. C. Drews, Metropolitan Bldg., St. Louis, Mo., Class Secretary.

Lieutenant Colonel Adolph R. Mueller is with a general hospital overseas.

Charles W. McLaughlin, Jr., is with the Pacific Fleet, c/o Fleet Post Office, San Francisco, Calif.

Captain Walton C. Finn's new address is: 164th Station Hospital, Ft. Lewis, Washington.

Col. Crawford F. Sams has a new address: 1509 Greenbuer St., Arlington, Va.

1930

Clyde E. Kane, 706 Walton Ave., St. Louis, Mo., Class Secretary.

Leslie W. Roth has a new address: Naval Dispensary, San Pedro, Calif.

Captain Donald E. Eggleston is with a station hospital.

1931

Sam Bassett, 1200 Big Bend Rd., Richmond Heights, Mo., Class Secretary.

Lt. Colonel Tom F. Whayne, A.P.O. 887, c/o P.M., New York City, N. Y., writes: "I am now with the Office of the Military Attache, American Embassy, London, and have been for the past eleven months. This work has been particularly interesting in that it has offered me a unique opportunity to become intimately acquainted with British medicine and medical personnel, both civilian and military. My basic mission, however, has been accomplished here and soon I am to take over the Preventive Medicine organization of a large setup, which I hope will be very active. Several Washing-

ton men are now here or near here—Don Chamberlin '30, Rolla Wray '31, and Bricker '34. You will also remember Dr. George D. Williams, formerly of the Anatomy Department. May I express my pride in being an alumnus of Washington and thank you for the courtesies the school has extended to me."

Captain Lloyd K. Kaiser is a flight surgeon overseas.

M. M. Weinbaum's address is: 264 S. Main St., Marion, Ohio.

H. L. Hoover, Jr., has a new address: Station Hospital, Camp Wolters, Texas.

1932

Lieutenant Sol Weisman is head of the medical unit on Saipan Island. It is his task to check our wounded as they are brought in from the front lines and to expedite their evacuation to emergency hospitals in the beach area to hospital ships off shore. The "Doc" is also responsible for supplying the forward aid stations with all necessary medical supplies and for the sanitation of the Command Post area. Other than the administration of blood plasma and narcotics, or redressing wounds, very little treatment of wounded is attempted by his outfit. It is deemed wiser to rush injured men to spots where better facilities are available. Lieutenant Weisman was also present at the capture of Namur Island, Kwajalein atoll, where he received a minor injury and for which he was awarded the Order of the Purple Heart (from Associated Press dispatch in the St. Louis Post-Dispatch).

Captain Charles G. Stauffacher's address is: 718th Amph. Trac. Bn., Ft. Ord, Calif.

Lt. Commander Lillian Hadsell, 102 Grayton Street, Chevy Chase, Md., writes: "Thought you might like to know what one of the former graduates of the medical school is now doing in the service. I reported for active duty January 17, 1944 at National Naval Medical Center, Bethesda, Maryland. I am now stationed at Arlington, Va."

Major Lee Gottlieb's address is: Halman General Hospital, Longview, Texas.

Edward J. Kloess has a new address: Station Hospital, Sioux Falls, South Dakota.

1933

John D. Maddox has a new address: U. S. Naval Hospital, Rancho San Margereta, Camp Pendleton, Calif.

Carl S. McLemore's address is: Station Hospital, Dale Malry Field, Tallahassee, Florida.

Major Ralph W. Knewitz's address is: 1849 Unit, Camp Swift, Texas.

Colonel Paul Kisner is commanding officer of a station hospital in the South Pacific.

Captain Christopher H. Martin is in the X-ray department of a general hospital.

Colonel Samuel E. Stuart is the medical director, Headquarters Services of Supply in the South Pacific.

1934

Stanley M. Leydig, 1652 South Grand, St. Louis, Mo., Class Secretary.

Lt. Colonel Ezra L. Evans, Jr., has been in charge of a Medical Battalion, Armored, for more than a year and has been advanced to rank of Lt. Col. after being placed in charge of the Battalion. His address is: A.P.O. 259, c/o P.M., New York, New York.

Lt. Samuel Swartz's address is: Regional Hospital, Ft. Riley, Kansas.

Major Leon B. Thomas is stationed in Alaska.

Captain Charles E. Stindel's address is: 6205 Tholozan Avenue, St. Louis 9, Mo.

Leo W. Lloyd is a captain with a general hospital overseas.

Lieutenant Carl P. Birk is stationed at Carlisle Barracks, Pa.

Captain Harmon J. Bailey's new address is: c/o A. R. Parsons, Guion Road, Rye, New York. He is a full flight surgeon and will go overseas this fall.

1935

Lt. Commander R. V. King's new address is: Navy Recruiting Station, Baltimore, Maryland.

Lt. Colonel Charles L. Langsam writes: "Just a line to tell you that I have enjoyed receiving the "Quarterly" very much. I am interested to see where all my classmates are in the various parts of the world. The Army still has me at Camp Davis, North Carolina, but has not entirely forgotten me, for several days ago they informed me that I am now a Lt. Colonel."

Captain Edward S. Powers has a new address: A.P.O. 920, c/o P.M., San Francisco, California.

Major Richard A. Sutter's address is: A.P.O. 5902, c/o P.M., New York, New York.

Dr. Joseph H. Needles has a new address: 17 Orchard St., Leominster, Mass.

Lt. A. R. Bortnick's new address is: 19 Bomb. Group, AAB, Pyote, Texas.

Lt. R. J. Budke's new address is: Acorn Assembly, Port Huenenne, Calif.

1936

The following letter was received from Captain Saul Dworkin: "Back in the old days in the sober confines of my examining room, if anyone had predicted my part in the middle of the night before D-Day, my conclusion would have been that I had a mental case on my hands. Imagine me, a pudgy, paunchy, bald headed, bovinely serene practitioner of the gentle art of medicine transformed into a daring warrior. I do not know how one acquires a belligerent mind. I suppose it is the fury one develops when the security of one's country is threatened, or perhaps it comes from seeing others risk their lives and die. Whatever the reason, I joined a surgical team of six doctors and four medical aid soldiers who thought that a full surgical hospital ought to be brought in with the airborne troops to give complete major surgical attention at the earliest moment required. Later events fully justified our actions.

We were given two gliders for our personnel, a jeep and a trailer load of complete surgical equipment, including instruments, anesthetics, plasters, litters, plasma, and transfusion sets. We were prepared for any type of major surgical procedure, both from the standpoint of personnel and equipment. In accordance with the airborne policy of not putting all your eggs in one basket, our personnel was widely distributed among the fighting troops so that I found myself in a glider containing a trailer load of ammunition. We took off at 1 a. m., the beach invasion being scheduled for 7 a. m., and landed at 2:30 a. m. There was a nasty rain and rough weather on the way over but our pilot did wonders in easing us through the air currents. When we hit the coast of France, we were caught in searchlights and peppered by flak and even small arms fire, as we flew very low. What one misses most sitting there waiting in a glider is a parachute. Somehow or other this is a great safety fetish, even though back in your senses you know you are flying too low to ever get a chute functioning in time.

I began to thank God when we finally cut loose from the tow-ship but soon learned this was premature. In trying to avoid a field where we could see firing, our pilot crash-landed into the trees. When we hit, I careened about like a billiard ball but received no serious injury. Several members of the team suffered fractures and bruises but all were able to carry on. There was machine gun fire all about us so we

scrambled out with the injured into a hedgerow ditch. When things had cooled down somewhat we went about giving first aid to crash and gun shot casualties, even giving plasma in the veins right out on the field. Never again will we neglect to take along those most important pieces of glider medical equipment, a gun and a few hand grenades. We never knew when a Jerry might open fire from a hedge. I had to creep about most of the night with an armed guard for protection. The troops were wonderful in their understanding and appreciation of the work we were doing.

In the early morning we set out for a chateau which had been captured, in which we decided to set up our hospital. On our way up in the jeep we were sniped at several times but went on at a fast clip. From almost every tree, it seemed, flapping crazily in the wind, there dangled silk parachutes. In the distance we could hear our naval bombardment opening up on the beaches. In this chateau we set up the first Allied hospital in the invasion of Europe and brought surgery to the airbornes almost a whole day before they could otherwise have expected it. We did a great deal of work, abdominal cases, head, chest, arms, legs, almost any kind of wound presented by war injuries. On the night of D-day we received more medical help. For four days and night we did not sleep, keeping awake on medical stimulants such as benzedrine. On the fourth night at midnight, we received a very tragic direct hit by a bomb. Except for a few cuts and painful bruises, I was intact. We immediately set up in an adjoining field in tents and continued operating. There were other incidents such as being caught in .88 shell fire and mortar fire on several occasions but the really serious occasions are those I have described above in which we lost many of our friends and some of our patients.

When the work of the airbornes slacked off, I was able to wander about and visit with the French. Having been exposed to French in school for several years, I was able to converse with them. An American speaking French was so rare that when I began a conversation, crowds would gather to ask questions such as when we would bring them coal, clothes, or flour, or why didn't the Americans buy up their milk so they wouldn't have to throw it away on the fields.

Most of the stores in Normandy were shut but merchants gradually filtered back. There was plenty of fountain pens, cigarette lighters, pipes, etc., which are unobtainable in England. Soon these were all sold. One of the most amazing and gratifying gustatorial sights to American doughboys who had spent months among the lean meat-rationed English was the huge quantity of choice steaks they could buy for 30 cents a pound.

One of the most interesting features of the early days of the invasion was a drink made by the Normandy farmers out of cider. They called it either Cognac, Calvadosse, or Eau de Vie, but it is nothing other than our good old American applejack only more so.

Perhaps when you receive this letter the war will be practically over, and I will again be in the good old U.S.A." (From an article in the St. Louis Post-Dispatch.)

Lt. J. H. Bryan's address is: S. N. Freeman House, West Bay Road, Osterville, Cape Cod, Mass.

H. R. Atherton's address is: 7569 Buckingham Drive, Apt. 1, Clayton 5, Mo.

Major Kenneth E. Pletcher's address is: Office of the Air Surgeon, Washington, D. C.

Capt. Merrill C. Davenport's new address is: A.P.O. 90, c/o P.M., New York, N. Y.

Captain Elwyn N. Akers, commanding officer of a medical corps unit serving with an infantry division in France, has been awarded the Bronze Star Medal for "meritorious service during military operations against the enemy in Normandy."

1937

Major Morton D. Pareira's address is: AAF Regional Station Hospital, Sioux Falls Army Air Field, South Dakota.

Dr. Clarence Kusunoki's address is: 1895 N. King Street, Honolulu, Hawaii.

Lt. Colonel Martin A. Compton's address is: 1456 N. Longfellow St., Arlington, Va.

David Royal Wall's address is: 13 A.D., A.P.O. 263, Camp Bowie, Texas.

Lt. Barnard C. Trowbridge has a new address: Scott Field, Belleville, Ill.

Captain Ralph C. Peterson's new address is: 1315 E. Cota, Santa Barbara, Calif.

1938

Captain John R. Lionberger, Station Hospital, Patterson Field, Ohio, Class Secretary.

Major Clarence C. Hetzel is a flight Surgeon.

Howard A. Steiner is in the X-ray department of a general hospital.

Captain William G. Baker's address is: 726 W. 48th South, Murray 7, Utah.

Major Alfred Golden, 1604 Carey Lane, Silver Spring, Md., writes: "I went on active duty November 4, 1940, and by the greatest good luck was assigned as a pathologist to the Army Institute of Pathology at Washington, D. C. I have been here ever since, exclusive of short assignments in Latin America in connection with the tropical disease program. But all good things eventually come to an end, and perhaps lead to even better things. By the time this letter reaches you, my transfer will have taken effect to the Division of Health and Sanitation, Office of the Coordinator of Interamerican Affairs. Thereafter I shall collect the personnel and equipment for a pathologic laboratory unit for service in Latin America, concentrating on the study of tropical ulcers, and of onchocerciasis. We expect to be gone about a year."

Major William Pratt's address is: A.P.O. 5541, c/o P.M., New York, N. Y.

Dr. Phillip Rosenblatt's new address is: 231 East 76th Street, New York 21, New York.

Lt. J. G. Blanketship recently visited the alumni office. Before he entered the service he was in group practice in Boonville, Missouri, at the Van Ravenswaay Clinic. His present address is: Fleet Post Office, New York, N. Y. Lt. Blanketship reports that William Allee '38 and Wade Robinson '39 are prisoners of the Japanese.

Kameichi Takenaka's new address is: P.O. Box 284, Wahiawa, Oahu. He writes: "Following graduation in 1938 and after completing a year's internship at the City Hospital, I interned a year at Wesley Hospital in Wichita, Kansas. In 1940 after completing half year of residency at the Wichita Hospital, I returned to Hawaii. I was granted the Territorial medical license in August 1941 and at the time the war broke out, I was preparing to go into practice. Until September 1943 I worked in a hospital as a resident physician to relieve shortage of personnel. On October 22, 1943 I 'put up my shingle' out in Wahiawa, a fast-growing rural community. It has been about 8 months since, and I have been fairly busy, considering the fact that I have only begun. I married a local girl in December, 1941 and now have a little girl of 20 months. We are anxiously waiting and doing our small bits towards the day of Victory when we hope to visit the mainland and renew acquaintances at my Alma Mater and St. Louis."

T. Victor Richey's address is: Gen. Delivery, Aptos, Calif.

Warren Ferguson Smith's new address is: NAS, Squantum, Mass.

Lawrence M. Kotner's new address is: 6610 Wright Avenue, St. Louis, Mo.

1939

Major Miles Foster, Jr., writes: "I receive the Quarterly with real interest and enjoy it thoroughly. I'm still at Ft. Leonard Wood after three years —same place, same job—pathologist to the hospital and chief of the laboratory service, but hope to go overseas before long."

Harry Bryant Campbell is in New Guinea.

Captain Patrick M. Cockett is in the Medical Corps in the South Pacific. He served in the Munda Campaign on New Georgia. His address is: A.P.O. 43, c/o P.M., San Francisco, Calif.

Major Richard S. Fraser is executive officer of a general hospital.

Captain Reuben J. Maxwell is a flight surgeon in the Medical Corps.

Captain Darwin W. Neubauer's address is: A.P.O. 133, c/o P.M., New York, N. Y. The Captain is a flight surgeon.

Captain Raymond Kuhlmann recently returned from the Island of Aruba where he has been for the past two years. His present address is: Deshon General Hospital, Butler, Pa.

1940

Major George R. Geeseman's address is: Station Hospital, Drew Field, Tampa, Florida.

James H. Growdon's address is: 202 Sergeant Ave., Joplin, Missouri.

Dr. Betsy Wootten's new address is: 2500 Hilligass, Berkeley, Calif.

Ole Slind's new address is: 4538 46th Ave., S.W., Seattle 6, Wash.

Captain R. Cross writes: "It is surprising how many people one can see that were at one time at Washington. In Oran I met Lt. Col. Dan Meyers who undoubtedly was one of the best liked instructors in medicine. I also met McGinnis and Stewart of the Class of '41. Here in Italy what should happen but that on our first night in the country we should be assigned to the Washington University Unit for quarters and rations. They treated us as nice as if we were a part of their own organization. Our whole unit felt very welcome. I have, also, made contact with Ikuayan, '40, although I have not seen him yet. We are serving, at present, a general hospital handling French and Arab patients entirely. It is my misfortune to have studied only German. As a matter of fact we have only four people who could speak any French. I assure you we had quite a time the first week."

Captain Harry Sawyer's address is: Columbia Square, San Francisco 3, Calif.

1941

Lt. R. J. Cook, A.P.O. 758, c/o P.M., New York, N. Y., writes: "I have received and read with interest the Report of Barnes Hospital and Minutes of the Barnes Hospital Society Meeting. I am proud to have once been associated with an organization doing such a grand job under the strained circumstances of these times. There is little that I am permitted to relate other than that the weather is cool, movies are available every evening, and we have some fast bridge games. We are rather busy these days and the results are increasingly gratifying. And not least I am naturally awaiting the time when I can first see my year and a half old son."

Captain Charles E. Fildes has a new address: A.P.O. 758, c/o P.M., New York, N. Y.

Lt. Kenneth A. Koerner's address is: Army Medical School, Army Medical Center, Washington, D. C.

Lt. Colonel Thomas Ozment's new address is: A.P.O. 230, c/o P.M., New York, N. Y.

Captain William C. Stahl's address is: Station Hospital, Camp Stewart, Ga.

Joseph L. Glaser's new address is: 4910 W. Pine, St. Louis 8, Mo.

Captain Charles H. Ransom's address is: 242d Med. Bn., Camp Edwards, Mass.

1942

Lt. James F. Cranshaw is with a medical battalion in the South Pacific.

Lt. Arnold J. Hurman is in the Medical Corps overseas.

Lt. Hyman B. Stillerman's address is: 4th Aux. Surg. Group, Lawson General Hospital, Atlanta, Ga.

Samuel Ellis, Jr., has a new address: Box 513, Raymondville, Texas.

Lt. J. C. Neavles, A.P.O. 472, c/o P.M., New York, writes: "You may be curious about the effectivity of front-line under fire medicine. It works—there are three life savers for us: the Thomas leg splint, the morphine syrette, and the plasma. Without these we could not function. I have had a chance to do considerable debridement surgery and have treated many pneumo and hemothoraces. Ligation is rare, since the crushing type of shrapnel injury frees enough tissue factors to make rapid clotting. Also the concussion syndrome of the British journels is rare now."

March, 1943

Sigmund Gundle's new address is: 5400 Arsenal Street, St. Louis 9, Mo.

Don L. Fisher is in the Medical Corps at Camp Cooke, California.

Daniel G. Santer's address is: 6414 North Richards, Milwaukee 11, Wis.

Lt. Robert B. Best has a new address: M.D.R.P. Barnes G.H., Vancouver Barracks, Washington.

Forrest C. Lawrence has a new address: 928 Spruce Street, Pueblo, Colo.

Lt. Melvin L. Goldman's address is: Camp Pickett, Va.

Lt. Del Roy R. Davis has a new address: A.P.O. 95, c/o P.M., New York, N. Y.

Harlan I. Firminger's address is: S.C.U. #1902, Station Hospital, Fort Douglas, Utah.

Fred C. Schweitzer's address is: 615 E. Elm, Springfield, Mo.

Lt. Frank R. Daley's address is: 162 1st S. U., Ft. Custer, Michigan.

December, 1943

Walter A. Rohlfing, Jr., announces the arrival of Walter A. Rohlfing III, born August 23, 1944.

Student News

Mr. and Mrs. Ralph R. Luce are proud to announce the birth of their daughter, Donna, born April 29. Mr. Luce is a member of the Class of 1945, and will intern at St. Louis City Hospital.

Eugene Taylor and Bonnie Speers were married Saturday, June 3, in the St. John's Methodist Church in St. Louis. Mr. Taylor is a member of the Class of June, 1945.

Mr. and Mrs. Robert Nottingham have a new son, David Alan, born May 31. Mr. Nottingham is a member of the Class of 1944, and will intern at St. Luke's Hospital in St. Louis, Missouri.

Majorie Kammerer and Gary Wood were married June 17 at the Grace Methodist Church in St. Louis. Mr. Wood is a member of the class of June, 1945, and will intern at the St. Francis Hospital in Wichita, Kansas.

Mr. and Mrs. George Kalmanson have a new daughter, Sally Jo, born July 10. Mr. Kalmanson is a member of the junior class, and will intern at the Cedars of Lebanon Hospital in Los Angeles, California.

Mr. and Mrs. Harwell Dabbs have a new daughter, Beth, born May 26. Mr. Dabbs is a member of the junior class, and will intern in surgery at Barnes Hospital in St. Louis, Missouri.

Mr. and Mrs. Richard Musser have a new son, Richard Eric, Jr., born August 21. Mr. Musser is a member of the junior class and will intern at the Tacoma General Hospital in Tacoma, Washington.

Personals from the Faculty

Major Robert E. Votaw's new address is: Station Hospital, Bolling Field, D. C.

A son was born to Captain and Mrs. Ernest Sachs, Jr., May 7. The baby weighed seven pounds, five ounces, and is named Ernest Paul Sachs III.

Dr. and Mrs. John Smith are proud to announce the birth of their daughter, Florence, born May 3.

Guerdan Hardy, former instructor in clinical otolaryngology, has a new address: U. S. Naval Hosp., Navy N. 128, c/o F.P.O., San Francisco, California.

In Memoriam

Oliver S. Bacon, St. L. '89, St. Louis, Mo., died January 19, aged 79.

William S. Barker, Mo. '90, Webster Groves, Mo., died April 16, aged 81.

John F. Bolton '04, Tulsa, Okla., died March 27, aged 64.

Rudolph T. Ehrhardt, St. L. '86, St. Louis, Mo., died March 24, aged 79.

Charles H. Fulbright, Mo. '89, St. James, Mo., died April 18, aged 79.

Samuel G. Gant, Mo. '87, Miami, Fla., died January 22, aged 69.

Haynie M. Grace, Mo. '91, Chillicothe, Mo., died June 13, aged 78.

Charles A. Hadsell, Mo. '85, Alamosa, Colo., died September 3, aged 90.

Albert H. Hamel, '90, St. Louis, Mo., died May 17, aged 77.

Fleet H. Harrison, Mo. '97, Imlay, Nev., died June 16, aged 69.

Jacob A. Hartmann, '96, St. Louis, Mo., died February 3, aged 74.

Moses W. Hoge, St. L. '83, St. Louis, Mo., died May 5, aged 83.

Lincoln S. Lacy, Mo. '98, Pittsfield, Illinois, died April 10, aged 83.

Ross M. Newman, Major in Medical Corps of U. S. Army, '31, Kansas City, Mo., died June 10, aged 38.

James F. Roach, Mo. '96, Centralia, Illinois, died January 26, aged 69.

Joseph F. Roberts, Mo. '77, Bolivar, Mo., died February 10, aged 93.

David E. Smith, 14, Bonne Terre, Mo., died May 5, aged 55.

Charles D. Stratton, Mo. '83, Rothville, Mo., died April 5, aged 85.

William D. Townley, Mo. '82, Chamois, Mo., died January 26, aged 84.

Frances M. Vessells, Mo. '99, Perryville, Mo., died May 23, aged 69.

Frank J. Weber, '04, Olney, Illinois, died March 25, aged 66.

Betty Whitson, '41, Jersey City, N. J., died May 21, aged 33.

WASHINGTON UNIVERSITY

Harry B. Wallace, A.B., Acting Chancellor

The College of Liberal Arts
William G. Bowling, A.M., Dean

The School of Engineering
Alexander S. Langsdorf, M.M.E., Dean

The School of Architecture
Alexander S. Langsdorf, M.M.E., Dean

The School of Business and Public Administration
William H. Stead, Ph.D., Dean

The Henry Shaw School of Botany
George T. Moore, Ph.D., Director

The School of Graduate Studies
Richard F. Jones, Ph.D., Dean

The School of Law
Warner Fuller, B.S., LL.B., Acting Dean

The School of Medicine
Philip A. Shaffer, Ph.D., Dean

The School of Dentistry
Benno E. Lischer, D.M.D., Dean

The School of Nursing
Louise Knapp, R.N., B.S., A.M., Director

The School of Fine Arts
Kenneth E. Hudson, B.F.A., Dean

University College
Willis H. Reals, Ph.D., Acting Dean

The Summer School
Frank L. Wright, A.M., Ed.D., Director

Mary Institute, a preparatory school for girls, located at Ladue and Warson Roads, is also conducted under the charter of the University.

Note: Complete information about any of the schools listed above may be obtained by writing to the Dean or Director concerned.

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